



Final Exam 2017/2018 - Model no. (1) – (Second) Attempt

Note: Answer FIVE Questions Only

**Q1/** Write a C++ program that asks the user to enter an integer number ( $x$ ), then determines and prints whether the entered number is odd or even.

(20 marks)

**Q2/** Write a program that reads a positive integer number ( $n$ ) and computes and prints its factorial ( $n!$ ) by using *for* statement.

(20 marks)

**Q3/** Write a C++ program using *do...while* statement that computes the value of  $e^x$  by using the following series

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots \quad (10 \text{ terms})$$

(20 marks)

**Q4/** Write a C++ program to compute the sum and product of three floating-point numbers ( $n1$ ,  $n2$  and  $n3$ ) using functions

(20 marks)

**Q5/** Write a C++ program to compute the product of main diagonal elements and sum of the secondary diagonal elements in a two-dimensional array  $B$  with 3 rows and 3 columns? Use C++11 to define the array.

(20 marks)

Q6/ What do the following programs print?

(20 marks)

<p>1</p> <pre>#include &lt;iostream&gt; using namespace std; int inline fun (int x, int y) {     int z = x*y+y;     return z; } int inline fun (int x) {     int w = x*x+x;     return w; }  int main() {     int x=5, y=6;     cout &lt;&lt; fun(x) + 10;     return 0; }</pre>	<p>3</p> <pre>#include &lt;iostream&gt; #include&lt;array&gt; #include&lt;algorithm&gt; using namespace std; int main() {     array&lt;int,10&gt; A = { };     for(int &amp;index : A)         index*= 3;     sort(A.begin(),A.end());     for(size_t i=0;i&lt;A.size();++i)         cout &lt;&lt; A[i] &lt;&lt; " ";     cout &lt;&lt; endl;     bool found = binary_search( A.begin(), A.end(), 1 );     cout &lt;&lt; 1 &lt;&lt; ( found ? " was" : " was not" ) &lt;&lt; " found in array A";     return 0; }</pre>
<p>2</p> <pre>#include &lt;iostream&gt; using namespace std; int main() {     int x=0;     do     {         if((x&gt;=4)&amp;&amp;(x&lt;=6))         {             x++;             continue;         }         else             cout &lt;&lt; ++x &lt;&lt; " ";         if(x == 5)             break;         else             cout &lt;&lt; x++ &lt;&lt; endl;     }while(x &lt;= 12);     return 0; }</pre>	<p>4</p> <pre>#include &lt;iostream&gt; using namespace std; int main() {     int x=0,flag=1;     for( ;flag!=0;++x)     {         x--;         cout &lt;&lt; x++ &lt;&lt; " ";         x--;         if(x==5)             flag=0;         x--;     }     return 0; }</pre>

BEST OF LUCK



Examiner  
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Final Exam 2017/2018 - Model no. ( 2 ) – (Second) Attempt

Q1: Write program in c++ to read N records of students ,each record contains  
1.No 2.Name 3.Dept. 4.Avg. , print the information of students then print the  
information of students in same department .

(20 mark)

Q2: A: Define the following :

(12 mark)

1- Completed graph

2- stack

3-linked list

B: What are these function do ?

1- isalpha(ch) 2- strupper() 3- strcat(st1,st2) 4- pop()

(10 mark)

Q3: :A:Give an example of 1- Balanced tree 2- Wheel graph.

(10 mark)

B: Write a procedure to check if stack is full or not.

(10 mark)

Q4: Answer the following ( chose three only each branch 6 marks ) :

(18 mark)

1- list the steps of Selection -Sort algorithm ,then arrange  
elements in ascending order in following list :



45 67 98 11 32 90

2- write a procedure of Quick Sort algorithm .

3-list the steps of postorder traversing tree (LRN) with example.

4- Necessary codes to add an element to linked list (at the first)



Q5:A: Draw the tree if the :

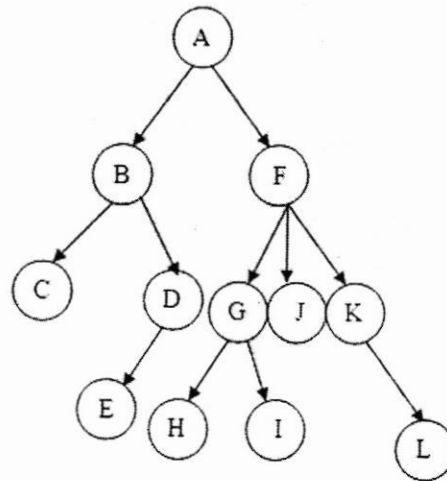
(10 mark)

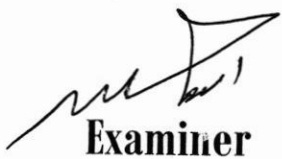
NLR : A B D F I C G H J L K

LNR : D B I F A G C L J H K

B: What is the TOP-DOWN traversing tree algorithm, what is the result of traversing The following tree ?

(10 mark)



  
Examiner

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*Best Wishes*



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